
AI AND INTELLECTUAL PROPERTY RIGHTS: DISRUPTIONS TO CONVENTIONAL IP PARADIGMS

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ABSTRACT

The proliferation advancement of artificial intelligence (AI) is revolutionizing various fields, presenting significant challenges to traditional intellectual property (IP) concepts. This paper explores the intricate intersection of AI and IP rights, highlighting the disruptions AI-generated works pose to established legal principles. Initially, this paper pinpoints the fundamental types of IP patents, copyrights, trademarks, and trade secrets along with the core principles of originality, authorship, and inventiveness that underpin them. It then delves into the unique characteristics of AI-generated works and examines how current IP laws apply to these creations.

The core analysis focuses on several key challenges. Questions of authorship and ownership arise when considering rights to AI-generated works, especially given the legal implications of non-human creators. Assessing inventiveness in AI-generated inventions presents another challenge, complicating traditional patenting. Additionally, issues of originality and creativity in AI-generated content pose significant hurdles for copyright protection. The paper also addresses trademark issues, particularly AI's role in creating brand names and logos and AI systems' potential for trademark infringement.

To illustrate these challenges, the paper reviews notable case studies and legal precedents involving AI-generated art, literature, and inventions. A comparative analysis of international perspectives, including approaches from the US, EU, and China, highlights the diverse ways jurisdictions address these issues. The paper also discusses efforts to harmonize IP laws concerning AI-generated works globally.

The policy recommendations and future directions section proposes updates to legal definitions of authorship and inventorship to encompass AI. It suggests new IP protection models, such as *sui generis* rights, and recommends regulatory frameworks that balance innovation with adequate protection. The paper concludes by exploring AI's ethical and social implications on human creativity and employment, considering issues of

accessibility and equity in AI technology and IP rights.

This paper aims to provoke thoughtful discussion among policymakers, legal professionals, and stakeholders, urging them to develop adaptive legal frameworks that can effectively address the evolving challenges posed by AI to traditional IP concepts, fostering a fair and innovative environment.

Keywords: Artificial Intelligence (AI), Intellectual Property (IP), AI-generated works, Legal principles, Patents, Copyrights, Trademarks, Trade secrets, Originality, Authorship, Inventiveness, Ownership, Non-human creators, AI-generated inventions, Creativity, Trademark infringement, Case studies, Legal precedents, International perspectives, US IP laws, EU IP laws, China IP laws, Harmonization, Sui generis rights, Regulatory frameworks, Ethical implications, Social implications, Human creativity, Employment, Accessibility, Equity, Innovation, Policy recommendations, Legal frameworks.

Introduction

Artificial Intelligence (AI) is the simulation of human intelligence in machines.¹ They are programmed to think and learn. AI encompasses a variety of capabilities, such as learning, reasoning, problem-solving, perception, and language understanding. According to John McCarthy, who coined the term in 1956, AI is "the science and engineering of making intelligent machines, brilliant computer programs." In their seminal book "Artificial Intelligence: A Modern Approach," Stuart Russell and Peter Norvig define AI as "the study of agents that receive percepts from the environment and perform actions."² These definitions highlight the interdisciplinary nature of AI, drawing from fields such as computer science, psychology, and neuroscience to create systems capable of performing tasks that typically require human intelligence.

Intellectual Property (IP) rights are legal protections granted to creators and inventors to control and profit from their creations and inventions. These rights cover various forms of intellectual output, including inventions, literary and artistic works, designs, symbols, names, and images. According to David I. Bainbridge in "Intellectual Property," IP rights are "legal rights which

¹ Cardiovascular Imaging and Intervention Through the Lens of Artificial Intelligence, 16 *Interventional Cardiology Rev.* 1 (2021), <https://doi.org/10.15420/icr.2020.04>

² Marek Geryk, Artificial Intelligence in Higher Education Industry: Just a Brief Introduction to Complexity of an Issue of Future Challenges, *Sci. Papers Silesian U. Tech. Org. & Mgmt. Ser.*, No. 172, 2023, <https://doi.org/10.29119/1641-3466.2023.172.13>

result from intellectual activity in the industrial, scientific, literary and artistic fields.³ In their book "The Economic Structure of Intellectual Property Law," William Landes and Richard Posner describe IP rights as mechanisms that incentivize innovation and creativity by granting temporary monopolies for creations and inventions. These rights ensure that creators and inventors can⁴ Benefit financially from their work, encouraging continued innovation and disseminating new ideas and technologies.

The increasing prevalence of AI is profoundly reshaping various industries, leading to significant implications for IP law. AI systems can generate creative works and inventions independently as they become more sophisticated and widespread. This surge in AI-generated content challenges traditional IP concepts designed with human creators and inventors in mind. The impact of AI on IP law is not merely theoretical but has practical consequences for how innovation and creativity are protected and incentivized in the digital age.

This paper aims to analyze AI's challenges to traditional IP concepts, identify specific issues arising from these challenges, and suggest potential solutions. By examining the complexities of authorship, ownership, patentability, enforcement, and licensing in the context of AI, this paper aims to provide a comprehensive understanding of⁵ How IP law must evolve to address the realities of AI-driven innovation.

Overview of Intellectual Property Rights

Types of Intellectual Property:

Intellectual Property (IP) encompasses various forms of legal protections designed to safeguard the creations of the mind. The primary types of IP include patents, copyrights, trademarks, and trade secrets. Patents protect new inventions and grant the inventor exclusive rights to use, sell, and manufacture the invention for a limited period, typically 20 years.⁶ According to David I. Bainbridge, patents are "the bedrock of industrial innovation, providing inventors with a legal

³ D. Reis, F. De Moura & I. Gomes, Aspirations and Intellectual Property in the Worldwide Entrepreneurship Ecosystem, in *Proceedings of the Eur. Conf. on Intangibles & Intell. Capital* 370, 370–80 (2019).

⁴ Wysebridge Patent Bar Rev., Trademark: Intellectual Property Terminology Explained, <https://wysebridge.com/trademark-intellectual-property-terminology-explained/> (last visited Sept. 18, 2025).

⁵ Exploring the Boundaries of Artificial Intelligence: Advances and Challenges, Zenodo (2023), <https://doi.org/10.5281/zenodo.8091473>

⁶ Exploring the Boundaries of Artificial Intelligence: Advances and Challenges, Zenodo (2023), <https://doi.org/10.5281/zenodo.8091473>

framework to protect their innovations." Copyrights protect literary and artistic works such as books, music, and Films give the creator exclusive rights to reproduce, distribute, perform, and display the work. William Patry states that "copyright law is crucial for promoting the progress of science and arts by ensuring creators can control and benefit from their⁷ works." Trademarks protect symbols, names, and slogans to identify goods and services, ensuring consumers can distinguish between brands. Trade secrets such as formulas, practices, and designs protect confidential business information that provides a competitive edge.⁸

Traditional IP Concepts:

Traditional IP concepts are grounded in fundamental principles, including originality, authorship, and inventiveness. Originality is a crucial principle in copyright law, requiring the work to be independently created and possess minimal creativity. As expressed by Melville B. Nimmer, "originality remains the cornerstone of copyright protection, ensuring that the work is a product of the author's intellectual labor." Authorship pertains to the individual or entity that creates the work or invention. In the context of copyrights and patents, authorship is critical for determining who holds the rights and responsibilities associated with the IP. According to Jane C. Ginsburg, "Authorship not only defines ownership but also underpins the moral rights associated with the creation." Inventiveness, or the inventive step, is essential for patentability, requiring that the invention be novel and⁹ Non-obvious to someone skilled in the field.

Patents and Inventiveness:

Patents protect inventions that meet novelty, non-obviousness, and utility criteria. The concept of inventiveness, or non-obviousness, ensures that patents are only granted for genuinely innovative advancements. According to F.M. Scherer, "Patents are awarded for inventions that represent a significant leap beyond existing knowledge and technology." This principle is vital in preventing the patent system from being clogged with trivial improvements, thereby maintaining its focus on fostering substantial innovations. The inventive step must be assessed

⁷Manish Jindal, *Commercial Rights vs Copyright*, Bytescare (2025), <https://bytescare.com/blog/commercial-rights-vs-copyright>

⁸ *How Can You Protect Intellectual Property in Africa?*, AskAILawyer (2025), <https://www.askailawyer.com/legal-general/how-can-you-protect-intellectual-property-in-africa>

⁹ News from Australia and New Zealand, 30 *World Pat. Info.* 178 (2008), <https://doi.org/10.1016/j.wpi.2007.12.007>

from the perspective of someone skilled in the relevant field, ensuring that the innovation is not an obvious extension of prior art.

Copyrights and Originality:

Copyright law hinges on the principle of originality, which mandates that the work must be independently created and possess a modicum of creativity. This principle is essential in distinguishing protected works from those replicating existing ones. According to Paul Goldstein, "originality serves as the threshold for copyright protection, ensuring that the work reflects the author's contribution." This principle supports the balance between protecting creators' rights and promoting the free flow of ideas and information. By requiring originality, copyright law encourages the creation of new works while allowing for the reuse and transformation of existing materials in ways that contribute to cultural and intellectual growth.

Trademarks and Trade Secrets:

According to J, trademarks protect brand identity by ensuring consumers can distinguish between different goods and services, thereby preventing confusion in the marketplace. Thomas McCarthy, "Trademarks are the lifeblood of modern branding, serving as a guarantor of quality and source identification." On the other hand, trade secrets protect confidential business information that provides a competitive advantage. These can include formulas, processes, methods, and other proprietary information. As noted by Rochelle Cooper Dreyfuss, "Trade secrets are crucial for businesses to maintain their competitive edge,¹⁰ as they protect information that is not generally known and provides economic value." Protecting trade secrets encourages businesses to innovate without fearing losing their competitive advantages to rivals.

AI and Its Intersection with Intellectual Property

AI-Generated Works:

AI-generated works are creations produced by artificial intelligence systems without direct human authorship. These include anything from artwork, music, and literature to inventions and designs. Unlike human-created works, AI-generated content results from algorithms

¹⁰ *Forging the Future: VMware's Pledge to Tech Innovation and Adaptability*, Datafort (Dec. 13, 2023), <https://datafort.com/forging-the-future-vmwares-pledge-to-tech-innovation-and-adaptability/>

processing data and producing outputs based on learned patterns. For instance, an AI might compose a piece of music by analysing thousands of existing compositions and generating a new arrangement that adheres to recognized musical structures. According to Ryan Abbott in "The Reasonable Robot: Artificial Intelligence and the Law," AI-generated works present unique challenges to the traditional concepts of authorship because "these works are not the result of a human creator's direct input, but rather the output of autonomous machines."

Current Legal Framework:

The existing IP laws primarily recognize human creators and inventors, which creates a gap when dealing with AI-generated works. Under current copyright laws, such as the U.S. Copyright Act, authorship is typically reserved for human beings, leaving AI-generated works without clear ownership, for example, in the U.S. case of *Feist Publications, Inc. v. Rural Telephone Service Co.*¹¹, originality, and human authorship were emphasized as critical criteria for copyright protection. Similarly, the European Union's Directive on Copyright in the Digital Single Market does not explicitly address AI-generated works, leading to uncertainty about their status.

Applicability to AI-Generated Works:

The application of current IP laws to AI-generated works remains contentious. Patent laws, such as those outlined in the Indian Patents Act of 1970, require a human inventor, making it difficult to patent inventions created by AI. The recent European Patent Office (EPO) decision rejecting patent applications in which an AI system named DABUS was named the inventor highlights this issue. The EPO ruled that inventorship under the European Patent Convention requires a natural person, underscoring the legal barriers to recognizing AI as an inventor. In the U.S., the Patent Act similarly necessitates a human inventor, as the U.S. Patent and Trademark Office (USPTO) reinforced in its rejection of AI-generated patent applications.

Case Law and Indian Perspective:

In India, the legal framework also lacks provisions for AI-generated works. The Indian Copyright Act of 1957, like its international counterparts, defines an author in terms of human creators, leading to ambiguity regarding AI-generated content. Indian courts have yet to

¹¹ Khalid Shuaib, Copyright and Film Restoration, (92) *J. Film Preservation* 9 (2015).

address this issue directly. Still, the principles established in cases like *Eastern Book Company v. D.B. Modak*¹² emphasize the need for human creativity and judgment in authorship. This suggests that AI-generated works may not currently qualify for protection under Indian copyright law. Additionally, the Indian Patents Act of 1970 requires an "inventor" to be a natural person, mirroring the challenges faced internationally in recognizing AI as an inventor.

Future Directions and Potential Solutions:

There is a growing consensus among legal scholars and policymakers.¹³ To address these challenges and update IP laws to accommodate AI-generated works better. One potential solution is to create a new category of¹⁴ IP rights specifically for AI-generated content, which could clarify authorship and ownership issues. Ryan Abbott suggests in his book that "the law should evolve to recognize AI as inventors and authors in certain contexts," which could involve amending existing laws or introducing new legislation. In India, this could mean updating the Copyright and Patents Act to explicitly include provisions for AI-generated works, ensuring that human or machine-assisted creators are adequately protected and incentivized.

By examining these issues and proposing adjustments to the legal framework, the intersection of AI and IP can be navigated more effectively, fostering continued innovation while ensuring that the rights of all creators are recognized and upheld.

Challenges to Traditional IP Concepts

Authorship and Ownership:

One of the primary challenges AI poses to traditional IP concepts is the question of authorship and ownership. When an AI system generates a work of art, music, or literature, it is unclear who should be credited as the author. Traditional IP laws are designed to protect human creators, leaving a legal vacuum for non-human creators. As Ryan Abbott argues in "The Reasonable Robot: Artificial Intelligence and the Law," "Current intellectual property laws do

¹² *Eastern Book Company v. D.B. Modak*, (2008) 1 S.C.C. 1 (India).

¹³ DGKV, *The EU Artificial Intelligence Act Moves Forward*, DGKV (Mar. 15, 2024), <https://dgkv.com/news/the-eu-artificial-intelligence-act-moves-forward>

¹⁴ *Legal Challenges in Harnessing Generative Artificial Intelligence*, GamingTechLaw (Aug. 7, 2023), <https://www.gamingtechlaw.com/2023/08/generative-ai-navigating-legal-issues-artificial-intelligence>

not address the concept of non-human authorship, leading to considerable ambiguity regarding the ownership and rights of works generated by artificial intelligence."

This issue is particularly relevant in jurisdictions like India, where the Indian Copyright Act of 1957 and the Patents Act of 1970 both emphasize human authorship and inventorship.

Inventiveness and Patentability:

Assessing the inventiveness of AI-created inventions presents another significant challenge. Patent laws typically require that an invention be novel and involve an inventive step that could be more obvious to someone skilled in the field. However, AI systems can rapidly analyze vast amounts of data and generate solutions that might seem non-obvious to humans but are straightforward for the AI. According to F.M. Scherer, "the requirement of non-obviousness becomes problematic when considering inventions derived from AI systems," as these systems can identify and create novel solutions beyond human capability. Patent offices worldwide, including the Indian Patent Office, do not recognize AI as inventors. This stance was underscored by the European Patent Office's decision in the DABUS case, which rejected the idea of AI inventorship.

Copyright Protection:

The principle of originality is central to copyright protection, requiring that a work be independently created and possess some level of creativity. AI-generated content, however, complicates this notion. AI systems produce works based on the data they are trained on, raising questions about whether such works can be considered original. In "Copyright's Highway: From Gutenberg to the Celestial Jukebox," Paul Goldstein notes that "the originality requirement is challenged by AI's ability to mimic existing works." Case studies highlight these issues: AI-generated music compositions or artworks often closely resemble human-created works, blurring the lines of originality. In India, the Copyright Act of 1957 must address AI-generated works, leading to uncertainty about their protection under current laws.

Trademark Issues:

AI's role in creating brand names and logos introduces potential challenges related to trademark law. AI systems can generate new brand names and logos by analyzing existing trademarks and developing variations, which may lead to inadvertent trademark infringement. J. In

"McCarthy on Trademarks and Unfair Competition," Thomas McCarthy emphasizes that "AI's ability to create can result in unintentional copying or similarity, leading to legal conflicts." This risk is particularly pertinent in India, where the Trade Marks Act 1999 protects brand names and logos from infringement. AI-generated trademarks could easily infringe on existing marks, leading to disputes and litigation. Companies must ensure that AI-generated trademarks undergo thorough vetting to avoid conflicts.

Legal Implications and Potential Solutions:

Addressing these challenges requires a reevaluation and potential revision of existing IP laws. Legal scholars like Ryan Abbott suggest that "IP laws need to evolve to recognize AI's contributions and address the unique challenges posed by AI-generated.¹⁵ works." This could involve creating new categories of IP rights specifically for AI-generated content or explicitly amending existing laws to include provisions for non-human creators. In India, this might mean updating the Copyright Act of 1957 and the Patents Act of 1970 to clarify the protection and ownership of AI-generated works. By addressing these issues, the legal framework can better accommodate the realities of AI-driven innovation, ensuring that all human or machine-assisted creators are adequately protected and incentivized.

AI-Generated Art and Literature:

AI-generated art and literature have prompted numerous legal discussions and case studies worldwide. One prominent case is the creation of the painting "Edmond de Belamy," generated by the AI system developed by the Paris-based art collective Obvious. The painting sold for \$432,500 at Christie's auction, raising questions about the authorship and ownership of¹⁶ AI-generated artworks. According to Ryan Abbott in "The Reasonable Robot: Artificial Intelligence and the Law," "this case highlights the legal ambiguity surrounding AI-generated content and the necessity for clear legal frameworks to address authorship." In India, the legal framework does not recognize non-human authorship under the Copyright Act of 1957, leaving AI-generated art in a gray area without explicit protection or ownership rights.

¹⁵ Joseph Brittle, AI Art Ownership in Question – Who Owns The Copyright?, BigARTMob (Dec. 9, 2023), <https://bigartmob.com/who-owns-ai-generated-art/>

¹⁶ *Artificial Intelligence and Corporate Innovation: A Review and Research Agenda*, AI for Social Good (Jan. 11, 2024), <https://aiforsocialgood.ca/blog/artificial-intelligence-and-corporate-innovation-a-review-and-research-agenda>

AI in Patent Law:

AI's role in patent law has been a contentious issue, particularly with the filing of patent applications listing AI as the inventor. The most notable instance is the DABUS case, where AI systems created two inventions: a food container and a flashing light. The European Patent Office (EPO), the US Patent and Trademark Office (USPTO), and the UK Intellectual Property Office (UKIPO) all rejected the applications on the grounds that inventorship requires a natural person. These decisions underscore the challenges AI-generated inventions pose to traditional patent law. In India, the Patents Act of 1970 similarly requires a human inventor, as reflected in the statutory requirement for a natural person to be named in patent applications. Legal scholars like F.M. Scherer have argued that "patent laws need to adapt to the realities of AI-driven innovation by potentially recognizing AI contributions."

Trademark Disputes Involving AI:

Trademark disputes involving AI have emerged as AI systems are increasingly used to create brand names and logos. One notable case involves the AI-generated brand name "TOBOT," which led to a dispute with an existing trademark. As J. Thomas McCarthy explains in "McCarthy on Trademarks and Unfair Competition," "AI's capacity to generate trademarks can result in unintentional infringements, creating complex legal challenges." Under the Trade Marks Act of 1999, similar disputes could arise in India as AI systems generate names and logos that potentially infringe on existing trademarks. The lack of clear guidelines for AI-generated trademarks in Indian law poses a risk for businesses relying on AI for branding, necessitating thorough legal vetting to avoid conflicts.

Legal Outcomes and Implications:

The legal outcomes of these cases highlight the need to update IP laws to address AI-generated works. Ryan Abbott suggests that "recognizing AI's contributions in IP law could involve creating new categories of IP rights or amending existing laws." For instance, introducing specific provisions for AI-generated content in the Copyright Act of 1957 and the Patents Act of 1970 could provide clarity and protection for AI-generated works in India. Such updates would ensure that human or AI-assisted creators are adequately protected and incentivized, fostering innovation and creativity.

Looking ahead, it is essential for legal frameworks, both globally and in India, to evolve in response to AI's impact on IP. There is a growing recognition of the need to address these issues in India, with legal scholars and policymakers advocating for reforms. Professor Shamnad Basheer states, "India must proactively update its IP laws to keep pace with technological advancements and provide a robust legal framework for AI-generated innovations." By examining international precedents and adapting them to the Indian context, India can develop a legal environment supporting human and AI-driven creativity, ensuring continued growth and innovation in the digital age.

Comparative Analysis

International Perspectives:

Different jurisdictions have adopted varied approaches to address the challenges posed by AI in the context of intellectual property (IP). In the United States, the legal framework under the U.S. Copyright Act and the U.S. Patent Act does not recognize AI as an author or inventor. This stance was reinforced in the case involving the AI system DABUS, where the U.S. Patent and Trademark Office (USPTO) denied patent applications¹⁷ listing AI as the inventor, citing that inventors must be natural persons. Similarly, in the European Union, the European Patent Office (EPO) rejected patent applications for DABUS inventions on the grounds that the European Patent Convention (EPC)¹⁸ requires a human inventor. The EU's Directive on Copyright in the Digital Single Market¹⁹ does not explicitly address AI-generated works, leading to legal uncertainty.

In contrast, China has shown a more progressive attitude towards AI and IP. The Chinese National Intellectual Property Administration (CNIPA) has been exploring ways to accommodate AI-generated works within its legal framework. Dr. Guobin Cui, a leading IP scholar in China, notes that "China is actively considering reforms to address the unique challenges posed by AI,"²⁰ potentially recognizing AI-generated works under specific

¹⁷ Kemsley, J., *Inventors Must Be Human*, U.S. Federal Court Rules, *C&EN Global Enterprise*, <https://doi.org/10.1021/cen-10028-polcon1> (2022).

¹⁸ *Oncomouse*, Wikipedia, <https://en.wikipedia.org/wiki/Oncomouse>.

¹⁹ Ray J. Amirault, *The Next Great Educational Technology Debate: Personal Data, Its Ownership, and Privacy*, 20 *Q. Rev. Distance Educ.* 55 (2019).

²⁰ Drew Simshaw, *Ethical Issues in Robo-Lawyering: The Need for Guidance on Developing and Using Artificial Intelligence in the Practice of Law*, 70 *Hastings L.J.* 173 (2019)

circumstances." This approach reflects China's broader strategy to position itself as a leader in AI technology and innovation.

Harmonization Efforts:

Given the global nature of technology and innovation, harmonizing IP laws concerning AI-generated works is becoming increasingly important. International organizations like the World Intellectual Property Organization (WIPO) have²¹ initiated discussions to address these challenges. WIPO's "Conversation on Intellectual Property and Artificial Intelligence" aims to gather input from various stakeholders worldwide to develop a coherent framework for AI and IP. WIPO Director General Daren Tang emphasizes that "harmonizing IP laws for AI-generated works is crucial to provide legal certainty and foster innovation globally."

Efforts to harmonize IP laws also involve regional collaborations. The European Commission is currently working on the Artificial Intelligence Act, which aims to create a²² unified legal framework for AI across the EU. This legislation could impact IP laws by setting common standards for AI-generated works within member states. Additionally, bilateral agreements, such as the US-EU Trade and Technology Council, focus on aligning policies on emerging technologies, including AI and IP, to facilitate a consistent approach and reduce legal disparities.

International Comparisons:

Comparing the approaches of different jurisdictions provides valuable insights into the evolving landscape of AI and²³ IP. The conservative approach of not recognizing AI as inventors or authors in the US aims to preserve traditional IP concepts but may hinder innovation. The EU's similar stance highlights the challenges of adapting existing legal frameworks to new technologies. On the other hand, China's willingness to explore legal reforms demonstrates a proactive approach to embracing AI's potential while addressing its legal implications. As Ryan Abbott notes in "The Reasonable Robot: Artificial Intelligence and

²¹ John W. Sutherland, *Intellectual Property Rights: The West, India and China*, 8 *Perspectives on Global Dev. & Tech.* 399 (2009),

²² Daniel Araya, *AI Is Transforming How Business Is Done: What about Government?*, Centre for International Governance Innovation (May 22, 2023), <https://www.cigionline.org/articles/ai-is-transforming-how-business-is-done-what-about-government/>

²³ NIXSolutions, *The MIT Study on AI and Labor Replacement*, NIXSolutions (2023), <http://nixsolutions-ai.com/the-mit-study-on-ai-and>

the Law," "jurisdictions that adapt their IP laws to accommodate AI will be better positioned to harness its innovative capabilities."

Indian Perspective:

India's legal framework, including the Copyright Act of 1957 and the Patents Act of 1970, does not currently address AI-generated works explicitly. Indian policymakers can learn from the international experiences of the US, EU, and China to develop a balanced approach. Professor Shamnad Basheer emphasizes that "India must engage in international dialogues and adopt best practices from other jurisdictions to create a robust IP framework for AI." By studying international case laws and policy developments, India can craft laws that protect the rights of both human creators and AI-generated works, ensuring a legal environment conducive to innovation.

Future Directions:

To effectively address the challenges posed by AI,²⁴ India should consider participating in global discussions and harmonization efforts. By aligning its IP laws with international standards, India can ensure its legal framework supports technological advancements while protecting creators' rights. This might involve updating existing laws or introducing new legislation tailored explicitly to AI-generated works. As international efforts towards harmonization progress, India's proactive engagement will be crucial in shaping a legal landscape that fosters innovation and creativity in the digital age.

Policy Recommendations and Future Directions

Updating Legal Definitions:

To address the challenges posed by AI in²⁵ intellectual property (IP), it is essential to update legal definitions of authorship and inventorship, including AI. Current IP laws, such as those in the United States and the European Union, mandate that only natural persons can be recognized as authors or inventors. However, these definitions must be broadened as AI

²⁴ M3S Research Group: *Harnessing AI's Potential to Empower Singapore*, Datafort (July 18, 2023), <https://datafort.com/m3s-research-group-harnessing-ais-potential-to-empower-singapore/>

²⁵ Drew Simshaw, *Ethical Issues in Robo-Lawyering: The Need for Guidance on Developing and Using Artificial Intelligence in the Practice of Law*, 70 *Hastings L.J.* 173 (2019)

systems increasingly generate creative and innovative works. In "The Reasonable Robot: Artificial Intelligence and the Law," Ryan Abbott argues that "recognizing AI as authors and inventors would not only reflect the realities of modern technology but also incentivize further innovation." In India, the Copyright Act of 1957 and the Patents Act of 1970 could be amended to include AI-generated works, ensuring explicit clarity and legal recognition.

New IP Protection Models:

New models for protecting AI-generated works are necessary to address the unique characteristics of AI creativity. One potential solution is the introduction of *sui generis* rights, which are specially designed to protect AI-generated content. *Sui generis* rights could provide tailored protection without disrupting existing IP frameworks. This approach has been discussed in various jurisdictions, with some experts advocating for a separate category of rights for non-human creators. Dr. Guobin Cui states, "*sui generis* rights could offer a practical solution, balancing the need for protection with the distinctive nature of AI-generated works." Implementing such rights in India would involve creating new legal provisions that recognize and protect the outputs of AI systems, thereby fostering innovation while safeguarding intellectual property.

Regulatory Frameworks:

A comprehensive regulatory framework is crucial to balance innovation and protection in the context of AI-generated works. This framework should include guidelines for registering, owning, and enforcing rights related to AI-generated content. International examples, such as the European Commission's proposed Artificial Intelligence Act, offer valuable insights into how regulatory frameworks can be structured. The Act aims to create a unified legal approach to AI, addressing liability and compliance issues while promoting innovation. A similar framework could be developed in India, incorporating principles from international best practices. This would ensure that AI-driven innovations are adequately protected while providing clear guidelines for creators, businesses, and legal practitioners.

Encouraging Innovation:

Encouraging innovation while ensuring fair IP protection requires a multi-faceted approach. Policymakers must create an environment that incentivizes research and development in AI

while safeguarding the rights of creators and inventors. This can be achieved through financial incentives, such as²⁶ grants and tax benefits for AI research, and streamlined processes for patenting AI-related inventions. Professor Shamnad Basheer highlights the importance of "creating a legal and economic ecosystem that supports technological advancement and creativity." In India, fostering innovation could involve establishing AI research hubs, enhancing collaboration between academia and industry, and simplifying the IP application process for AI-generated works.

In conclusion, updating IP laws to accommodate AI-generated works is essential for fostering innovation and protecting intellectual property in the digital age. By expanding legal definitions of authorship and inventorship, introducing sui generis rights, and developing comprehensive regulatory frameworks, jurisdictions can effectively address the challenges posed by AI. India's engagement in international discussions and adoption of best practices will be crucial in shaping a robust legal environment that supports human and AI-driven creativity. As the technology landscape evolves, proactive and forward-thinking policies will ensure that IP laws remain relevant and practical, promoting innovation and economic growth.

Conclusion

This paper has examined AI's significant challenges to traditional intellectual property (IP) concepts. Key findings highlight the need to update legal definitions of authorship and inventorship to include AI, propose new IP protection models such as sui generis rights, and recommend comprehensive regulatory frameworks. Case studies and international perspectives underscore the urgency of these updates, particularly as AI-generated works continue to proliferate.

Final Thoughts: Addressing the IP challenges posed by AI is crucial for fostering a fair and innovative environment. As AI systems become increasingly capable of generating creative works and inventions, legal frameworks must evolve to recognize and protect these contributions. This ensures that creators and inventors are incentivized and promotes continued innovation and technological advancement.

²⁶ Joanna Brzyska & Izabela Szamrej-Baran, *The COVID-19 Pandemic and the Implementation of Sustainable Development Goals: The EU Perspective*, 15 *Sustainability* 13503 (2023), <https://doi.org/10.3390/su151813503>

Call to Action: Policymakers, legal professionals, and stakeholders must engage in ongoing dialogue to develop adaptive legal frameworks that accommodate the realities of AI-generated content. By learning from international best practices and tailoring solutions to local contexts, jurisdictions can create robust IP systems supporting human and AI-driven creativity. Proactive and forward-thinking policies will ensure that IP laws remain relevant and effective in the digital age.